

Qpacity performance comparison workbook

Joel Ward | Original workbook exhibit

Complete saved cell contents of every original worksheet. All columns of a worksheet appear together; rows continue vertically where needed. Original source row numbers are shown at left. Larger landscape pages keep wide models legible.

Source: Performace Spec Comparisons.xlsx

Formula results are the original saved results and have not been recalculated. Blank fields remain blank. PDF bookmarks lead to each worksheet.

ESS — A1:E24

Home Bat — A1:I57

ESS

Original worksheet A1:E24 | All columns A–E

1		Our ESS	Our ESS Storage Only	Tesla MegaPack (2-hour usage)	Tesla MegaPack (4-hour usage)
2	Chemistry	Graphene (no chemicals)	Graphene (no chemicals)	Lithium-Ion Phosphate	Lithium-Ion Phosphate
3	Power			1.9 mW	1 mW
4	Total Energy			3.9 mWh	3.9 mWh
5	Usable Energy (nominal?)				
6	Rated Current				
7	Frequency	60 Hz	60 Hz	60 Hz	
8	Interconnection				480 V AC 3 Phase
9	Round Trip Efficiency	99% ?	99% ?	92%	93.50%
10	Expected Life Cycles (charge/discharge rounds) (see also Warranty)	20,000 to 1 Million+	20,000 to 1 Million+		
11	Depth of Discharge (DoD)	100%	100%		
12	Degradation (expected % of loss per year) (see also Warranty)				
13	Operating Temperature				
14	Weight			84,000 lbs	
15	Size (height x width x depth)			9x30x5.5 feet	
16	Certifications			IP66, UL 1973 / 9540 / 9540A / 1741	
17	Emissions				
18	Enviromental				
19	Warranty Years			15 years	15 years
20	Warranty Cycles	20,000	20,000		
21	End of Warranty Capacity	100% ??	100% ??		

1		Our ESS	Our ESS Storage Only	Tesla MegaPack (2-hour usage)	Tesla MegaPack (4-hour usage)
22	Our Distributor Price				
23	Suggested Retail Price			2,414,070	
24	Annual Maintenance Cost			6,570	

Home Bat

Original worksheet A1:I57 | All columns A–I

1		Our Graphene Wall Battery 5.2KWh-100Ah	Our Graphene Wall Battery 10KWh-200Ah	Our Graphene Wall Battery 14.7KWh-300Ah	Our Lith/Graph Hybrid Wall Battery 5.2KWh-100Ah	Our Lith/Graph Hybrid Wall Battery 10KWh-200Ah	Our Lith/Graph Hybrid Wall Battery 14.7KWh-300Ah	Telsa Powerwall 2	Telsa Powerwall 2 Plus
2	Chemistry	Graphene (no chemicals)	Graphene (no chemicals)	Graphene (no chemicals)				Lithium-Ion	Lithium-Ion
3	Total Energy	5.2 kWh	10 kWh	14.7 kWh				14 kWh	14 kWh
4	Usable Energy (nominal?)							13.5 kWh	13.5 kWh
5	Rated Current	100 A	200 A	300 A					
6	Nominal Grid Voltage (input/output)							120/240	120/240
7	Grid Voltage Range							211.2 - 264 VAC	211.2 - 264 VAC
8	Frequency	60 Hz	60 Hz	60 Hz				60 Hz	60 Hz
9	Phase							240 VAC: 2W+N+GND	240 VAC: 2W+N+GND
10	Maximum Continuous Power ON-Grid							5kW-input 7.6kW-output	5kW-input 7.6kW-output
11	BESS Continuous Power							5kW-input 5kW-output	5kW-input 5kW-output
12	Maximum Continuous Power OFF-Grid							5kW-input 9.6kW-output	5kW-input 9.6kW-output
13	Maximum Continuous Current ON-Grid							32 A output	32 A output
14	BESS Continuous Current							24 A input	24 A input
15	Maximum Continuous Current OFF-Grid							40 A output	40 A output
16	Apparent Power, max continuous							5.8 kVA input/output	5.8 kVA input/output
17	Apparent Power, peak (10 seconds. off-grid, backup)							7.2 kVA input/output	7.2 kVA input/output
18	PV Maximum input Voltage								600 VDC

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19	PV Operating DC Input Voltage Range								60-550 VDC
20	PV DC MPPT Voltage Range								60-480 VDC
21	MPPTs								4 (1-2-1-2 input connectors per MPPT)
22	Maximum Current per MPPT								13 A
23	Maximum Short Circuit Current per MPPT								15 A
24	Overcurrent Protection Device							30 A	50 A
25	Imbalance for Split-Phase Loads							100%	
26	Power Factor Output Range							+/- 1.0 adjustable	+/- 0.9 to 1
27	Power Factor Output Range (full-rated power)							+/- 0.85	
28	Internal Battery DC Voltage							50 V	50 V
29	Round Trip Efficiency			99% ??				90%	90%
30	Rated Voltage (is this same as Battery DC Voltage above?)		48 V	48 V					
31	Maximum Charge Voltage		58.8 V	58.8 V					
32	Minimum Discharge Voltage		42 V	44 V					
33	Internal Resistance (is this important?)		</= 20 ohm	</= 25 ohm					
34	Expected Life Cycles (charge/discharge rounds) (see also Warranty)	20,000 to 1 Million+	20,000 to 1 Million+	20,000 to 1 Million+					
35	Depth of Discharge (DoD)			100%					
36	Degradation (expected % of loss per year) (see also Warranty)							3%	

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37	Protections			IP ??					Integrated arc fault circuit interrupter (AFCI), Rapid Shutdown (RSD)
38	Operating Temperature							-20 to 50C (-4 to 122F)	-20 to 50C (-4 to 122F)
39	Storage Temperature							-20 to 30C (-4 to 86F)	-20 to 30C (-4 to 86F)
40	Operating Humidity (RH)							Up to 100% condensing	Up to 100% condensing
41	Weight		100 kg (220 lbs)	150 kg (331 lbs)				114 kg (251 lbs)	
42	Size (height x width x depth)		960x400x111 mm (38x33x4 inch.)	960x760x170 mm (38x30x7 inch.)				1150x755x155 mm (45x30x6 inch.)	
43	Maximum Elevation							3000 M (9843 Ft)	
44	Enviroment							Indoor/Outdoor	
45	Enclosure Type							NEMA 3R	
46	Ingress Rating							IP67 (battery & electronics) IP56 (wiring compartment)	
47	Wet location Rating							YES	
48	Noise Level							< 40 dBA at 30C (86F)	
49	Certifications							UL 1642, UL 1741, UL 1973, UL 9540, IEEE 1547, UN 38.3	
50	Emissions							FCC Part 15 Class B, ICES 003	
51	Enviromental							RoHS Directive 2011/65/EU	

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52	Seismic							AC 156, IEEE 693-2005 (high)	
53	Warranty Years	12 years	12 years	12 years				10 years	10
54	Warranty Cycles	20,000	20,000	20,000				3,200	3,200
55	End of Warranty Capacity	100% ??	100% ??	100% ??				70%	70%
56	Our Distributor Price								
57	Suggested Retail Price								